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## Notes on the Habits of *Magdalinus armicollis* Say.

EARLY in April, 1873, the full-grown larvæ of *Magdalinus armicollis* Say, were found abundantly throughout Cambridge, Mass., under the bark of Elm. The burrows were about an inch and a half long, running generally with the grain, and in the cambium layer throughout their entire length. From the cell at the end an exit pierced the bark as far as the thin outer layer. The beetles usually attacked the upper branches, but several small elms were found with the bark of the trunk undermined nearly to the ground. Occasional specimens were found associated with *Superda tridentata* and *Synchroa punctata* in the thick bark of full-grown trunks.<sup>1</sup>

By the middle of April the larvæ showed signs of transforming; by the end of the month most of them had completed the change into pupa, and the imagos appeared in about eighteen days. From May 1st to May 18th the following changes took place:

1. The eyes and mandibles turned black, and the extremities of the wing-pads became bluish.
2. The thorax became reddish-brown, and the snout very dark brown or red.
3. The pupa-skin was cast off, and the wings and elytra straightened out.
4. The wings were folded under the elytra, and began to darken, showing a rectangular spot through each elytron.
5. The thorax darkened on the sides in two oval patches, leaving a line between, which gradually faded out; the spots on the elytra spread uniformly over their surfaces, leaving only their tips, which with the head were the last to become black.

The jet-black imagos emerged in great numbers from May

18th to May 28th, and sparingly during the first half of June. Owing probably to continued dry weather many imagos were unable to leave the bark, and occasionally one of the last to emerge was found with permanently dull-red elytra and thorax, or more commonly among the small males, with black thorax and red elytra. The imago varies from 3 to 6.25 millim. in length. The first pairs coupled, or showed signs of coupling, May 20th. The genitals were not kept continuously in contact, but a light touch was given at very regular intervals of two seconds, during which the male tapped the sides of the female with the tibiæ of the fore pair of legs.

The principal parasite observed was a Chalcid, probably belonging to the genus *Storthygocerus* Ratz., 1.5 to 2.5 millim. in length, which preys upon the larva of *Magdalinus*, and completes its transformations in advance of the beetle. It pupates about the first of May, the imagos appear about the 13th of the month, and by the first of June another brood of larvæ appears preying upon the few pupæ of *Magdalinus* which have not yet transformed. Two other parasites upon the larva of *Magdalinus* appear to be ichneumonids, one of which transforms within the larva-skin of its host, and the other weaves a pupa-case of its own. The imagos of the last two parasites do not appear before July, and were not observed.

*H. G. Hubbard.*

1. Ratzburg (*Forst-Insecten*, I, 2te Aufl. p. 125. Taf. IV fig. 3.) describes the habits of *M. violaceus* Linn. living under the bark of Pine on small branches or young trees, and notes also *M. aterrimus* Fabr. as living in a similar manner upon *Ulmus campestris* of Europe. (l. c. p. 125.)

A very careful description, with figures, of *M. carbonarius* Fabr. living on *Pinus maritima*, is given by E. Perris (*Annales de la Soc. Ent. de France*, 1856, p. 253 et seq.)

Say, (*M. armicollis* Say, *Journ. Acad. Nat. Sci. Philad.*, III, 1823, p. 312) has described only the red form, probably immature males. His *M. barbatus* (*Descr. of Curc. of N. Am.*, 1831, p. 6.) is probably the variation with red elytra and black thorax (all small immature males). It seems also that *M. pallidus* Say. (l. c. p. 7.) must be referred to this species.

ENTOMOLOGICAL EXCURSION TO MT. WASHINGTON.—Some of the members of the Club, with other entomologists, will spend several weeks this summer on Mt. Washington, in a camp one-fourth of a mile below the Half-Way House, and two hundred feet from the carriage road. They expect to leave Boston June 25. Other entomologists are invited to join the party.

*B. Pickman Mann.*